



Sunoco, Inc.
3144 Passyunk Avenue
Philadelphia, PA 19145-5299
215 339 2000

HAND DELIVERED

August 30, 2012

Mr. Edward Wiener
Chief, Source Registration
Air Management Services
321 University Avenue
Philadelphia, Pa. 19104

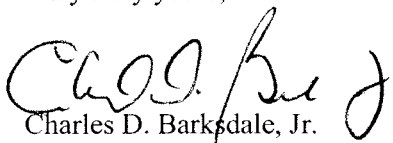
Re: Philadelphia Refinery; Plan Approval Application for Temporary Operation of the Girard Point Processing Area No. 38 Boiler During Maintenance or Steam Outages Involving No. 3 Boiler House or the Steam Generating Portions of Unit 1232; as per Fourth Amendment to the Consent Decree Civil Action No. 05-02866 as Lodged 8/17/12.

Dear Mr. Wiener:

Attached please find three copies of a Plan Approval Application and a check for \$1000.00 to cover the fee. This application covers the temporary operation of Girard Point Boiler No. 38 as referenced above.

Sunoco will appreciate receiving a letter that the application is administratively complete before the closing of the sale of the refinery to Phila. Energy Solutions Refining and Marketing LLC currently set for September 6, 2012.

Very truly yours,


Charles D. Barksdale, Jr.
Manager, Environmental Department

gcf

File: Permit App. For No. 38 Boiler Temp Oper. & AMS Correspondence 2012

SUNOCO, INC. (R&M)

PAYEE NAME
CITY OF PHILADELPHIA

PAYEE NO.
CITOFFP0023

PAYMENT DATE
08-28-2012

PAYMENT NO.
6002856162

CONTROL NO.
00000007

CONTROL NUMBER	DATE	APPL AREA	INVOICE NO.	GROSS AMOUNT	DISCOUNT AMOUNT	NET AMOUNT
4002	08-27-12	IN	82712100000	1,000.00	.00	1,000.00
PERMIT APPLICATION FEE FOR 3 BOILERHOUSE BACKUP				1,000.00	.00	1,000.00

FOR INQUIRIES, SEE REVERSE SIDE

FPCHKP

ADDRESS CHANGE INFORMATION
PAYEE NUMBER: CITOFFP0023

NAME: _____

ADDRESS: _____

IF YOUR ADDRESS HAS CHANGED, PLEASE
DETACH AND RETURN TO THE ADDRESS BELOW



SUNOCO, INC. (R&M)
SUITE LL 11TH FL
1735 MARKET STREET
PHILADELPHIA, PA 19103-7583

00007
56162

00007

VENDOR PAYMENT ⁶²⁻²² 311

PAYMENT DATE
08-28-2012

PAYMENT NO.
6002856162

Wachovia Bank of Delaware
National Association

PAY TO THE ORDER OF:

PAY EXACTLY

\$*****1,000.00

CITY OF PHILADELPHIA
C/O AIR MANAGEMENT SERVICES
321 UNIVERSITY AVE
PHILADELPHIA PA 19104-4543

Katrina Kowal
AUTHORIZED SIGNATURE



CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

APPLICATION FOR PLAN APPROVAL TO CONSTRUCT, MODIFY OR REACTIVATE AN AIR CONTAMINATION SOURCE AND/OR AIR CLEANING DEVICE (Prepare all information completely in print or type in triplicate)

SECTION A - APPLICATION INFORMATION

Location of source (Street Address) 3144 Passyunk Avenue		Facility Name Philadelphia Facility	
Owner Sunoco Inc. (R&M)		Tax ID No. 23-1743283	
Mailing Address 3144 Passyunk Avenue, Philadelphia, PA 19145		Telephone No. (215) 339-2074	Fax No. (215) 339-2657
Contact Person Charles D. Barksdale		Title Manager, Environmental Department	
Mailing Address 3144 Passyunk Avenue, Philadelphia, PA 19145		Telephone No. (215) 339-2074	Fax No. (215) 339-2657

SECTION B - DESCRIPTION OF ACTIVITY

Application type <input type="checkbox"/> New source <input type="checkbox"/> Modification <input type="checkbox"/> Replacement <input type="checkbox"/> Reactivation <input type="checkbox"/> Air cleaning device <input checked="" type="checkbox"/> Other		SIC Code 2911	Completion Date On Approval
<input type="checkbox"/> NSPS <input type="checkbox"/> NESHAP <input type="checkbox"/> Case by Case MACT <input type="checkbox"/> NSR <input type="checkbox"/> PSD		Does Facility submit Compliance Review Form biannually ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No attach Air Pollution Control Act Compliance Review Form with this application.	

Source Description:

Operate No. 38 Boiler at No. 3 Boiler House during 2013 and 2014 as a temporary back-up during periods of maintenance or down time at the Phila. Refinery No. 3 Boiler House or the steam generating portions of the 1232 unit. No. 38 boiler shall be permanently shut down no later than August 31, 2014.

SECTION C - PERMIT COORDINATION (ONLY REQUIRED FOR LAND DEVELOPMENT)

Question	YES	NO
1. Will the project involve construction activity that disturbs five or more acres of land?		X
2. Will the project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system?		X
3. Will the project involve the construction and operation of industrial waste treatment facility?		X
4. Is onsite sewage disposal proposed for your project?		X
5. Will the project involve construction of sewage treatment facilities, sanitary sewer, or sewage pumping station?		X
6. Is a stormwater collection and discharge system proposed for this project?		X
7. Will any work associated with this project take place in or near a stream, waterway, or wetland?		X
8. Does the project involve dredging or construction of any dam, pier, bridge or outfall pipe?		X
9. Will any solid waste or liquid wastes be generated as a result of the project?		X
10. Is a State Park located within two miles from your project?		X

SECTION D - CERTIFICATION

I certify that I have the authority to submit this Permit Application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Signature *James A. Keeler* Date 9/31/12 Address 3144 Passyunk Avenue, Philadelphia, PA 19145
Name & Title James A. Keeler, General Manager Phone (215) 339-7414 Fax (215) 339-2657

SECTION E - OFFICIAL USE ONLY

Application No.	Plant ID	Health District	Census Tract	Fee	Date Received
Approved by		Date	Conformance by		Date

SECTION F 1 - GENERAL SOURCE INFORMATION

1. SOURCE							2. NORMAL PROCESS OPERATING SCHEDULE						
	A. Type Source (Describe)	B. Manufacturer of Source	C. Model No.	D. Rated Capacity (Specify units)	E. Type of Materials Processed	A. Amount Processed/yr. (Specify units)	B. Average hr/day	C. Total hr/yr	D. % Throughput/Quarter				
									1 st	2 nd	3 rd	4 th	
1	No. 38 Boiler at No. 3 Boiler House				Refinery Fuel Gas/Natural Gas								

3. ESTIMATED FUEL USAGE (Specify Units)							4. ANNUAL FUEL USAGE						
A. Used in Unit	B. Type Fuel	C. Average Hourly Rate	D. Maximum Hourly Rate	E. Percent Sulfur	F. Percent Ash	G. Heating Value	A. Annual Amounts	B. Average hr/day	C. Total hr/yr	D. % Throughput/Quarter			
										1 st	2 nd	3 rd	4 th
	See Attached Discussions												
	Concerning Temporary												
	Use During Certain Steam												
	Outages												

5. IMPORTANT: Attach on a separate sheet a flow diagram of process giving all (gaseous, liquid, and solid) flow rates . Also list raw materials charged to process equipment and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, hoods or other pickup points, etc.).

SECTION F 1 - GENERAL SOURCE INFORMATION, CONTINUED

6. Describe process equipments in detail.

See Discussion Sections.

7. Describe fully the methods used to monitor and record all operating conditions that may affect the emission of air contaminants. Provide detailed information to show that these methods provided are adequate.

Existing NOx monitoring equipment aty No. 3 Boiler House will be used

8. Describe modifications to process equipments in detail.

Mainmtenance to the Boiler and Possible Installation of ULNB Technology

9. Attach any and all additional information necessary to adequately describe the process equipment and to perform a thorough evaluation of the extent and nature of its emissions.

See Attached Discussion Sections

- PROVIDE EQUIPMENT INFORMATION ON THIS PAGE IF SOURCES DO NOT BELONG TO SPECIAL CATEGORIES IN F2 TO F8, OTHERWISE REMOVE THIS PAGE FROM THIS APPLICATION.
- IF THERE ARE MORE EQUIPMENT, COPY THIS PAGE AND FILL IN THE INFORMATION AS INDICATED

SECTION F 2 - COMBUSTION UNITS INFORMATION, CONTINUED

6. OPERATING SCHEDULE

___ NA ___ hours/day ___ NA ___ days/week ___ NA ___ weeks/year

7. SEASONAL PERIODS (MONTHS) N/A

Operating using primary fuel _____ Operating using secondary fuel _____
 _____ to _____ _____ to _____
 Non-operating
 _____ to _____

8. If heat input is in excess of 250×10^6 Btu/hr., describe fully the methods used to record the following: rate of fuel burned; heating value, sulfur and ash content of fuels; smoke, sulfur oxides and nitrogen oxides emissions; and if electric generating plant, the average electrical output and the minimum and maximum hourly generation rate.

Sunoco will continue to monitor, record, and report with applicable requirements found in the Philadelphia Refinery's existing Title V permit and the Consent Decree Re to Heaters and Boilers

9. Describe modifications to boiler in detail.

See Discussion Sections

10. Type and method of disposal of all waste materials generated by this boiler.
 (Is a Solid Waste Disposal Permit needed? ☐ Yes ☒ No)

11. Briefly describe the method of handling the waste water from this boiler and its associated air pollution control equipment.
 (Is a Water quality Management Permit needed? ☐ Yes ☒ No)

12. Attach any and all additional information necessary to perform a thorough evaluation of this boiler.

See Attached Discussion Sections.

SECTION G - FLUE AND AIR CONTAMINANT EMISSION INFORMATION

I. STACK AND EXHAUSTER

This project does not involve any changes to existing stacks or emission points.

A. Outlet volume of exhaust gases

_____ CFM @ _____ °F _____ % Moisture

B. Exhauster (attach fan curves)

_____ in w.g. _____ HP @ _____ RPM

C. Stack height above grade (ft) _____

Grade elevation (ft) _____

Distance from discharge to nearest property line(ft) _____

D Stack diameter (ft) or Outlet duct area (sq. ft.)

E Weather Cap

☐ YES ☐ NO

F. Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

2. POTENTIAL PROCESS EMISSIONS (OUTLET FROM PROCESS, BEFORE ANY CONTROL EQUIPMENT)

See Attached Discussion Sections

A. Particulate loading (lbs/hr or gr/DSCF)

B. Specific gravity of particulate (not bulk density)

C. Attached particle size distribution information

D. Specify gaseous contaminants and concentration

Contaminant	Concentration	VOC Contaminants	Concentration
(1) SO _x	_____ ppm (Vol.) _____ lbs/hr	(4) _____	_____ ppm (Vol.) _____ lbs/hr
(2) NO _x	_____ ppm (Vol.) _____ lbs/hr	(5) _____	_____ ppm (Vol.) _____ lbs/hr
(3) CO	_____ ppm (Vol.) _____ lbs/hr	(6) _____	_____ ppm (Vol.) _____ lbs/hr

E. Does process vent through the control device? ☐ YES ☐ NO

- If YES continue and fill out the appropriate SECTION H - CONTROL EQUIPMENT
- If NO skip to SECTION I - MISCELLANEOUS INFORMATION

F. Can the control equipment be bypassed: (If Yes, explain) ☐ YES ☐ NO

3. ATMOSPHERIC EMISSIONS

A. Particulate matter emissions (tons per year)

See Attached Discussion Sections.

B. Gaseous contaminant emissions

Contaminants	Concentration	VOC Contaminants	Concentration
(1) _____ (tpy)	(4) _____ (tpy)		
(2) _____ (tpy)	(5) _____ (tpy)		
(3) _____ (tpy)	(6) _____ (tpy)		

Refer to Attached Discussion Sections

SECTION H - CONTROL EQUIPMENT, CONTINUED**12. COSTS – See the Attached Discussion Sections.****A. List costs associated with control equipment. (List individual controls separately)**

Control Equipment Cost:

Direct Cost:

Indirect Cost:

B. Estimated annual operating costs of control equipment only.**13. Describe modifications to control equipment in detail.**

N/A

14. Describe in detail the method of dust removal from the air cleaning and methods of controlling fugitive emissions from dust removal, handling and disposal.

N/A

15. Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If so, describe.

N/A

16. Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).**17. Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase the air contaminant emissions. Periodic maintenance reports are to be submitted to the Department.**

Maintenance will be provided as per the manufacturer's recommendations.

18. Attach any and all additional information necessary to thoroughly evaluate the control equipment.**See Attached Discussion Sections.****SECTION I - MISCELLANEOUS INFORMATION**

1. Specify monitoring and recording devices will be used for monitoring and recording of the emission of air contaminants. Provide detailed information to show that the facilities provided are adequate. Include cost and maintenance information.

- | | | |
|--|---|--|
| <input type="checkbox"/> Opacity monitoring system | <input type="checkbox"/> SOx monitoring system | <input checked="" type="checkbox"/> NOx monitoring system |
| <input type="checkbox"/> CO monitoring system | <input type="checkbox"/> CO2 monitoring system | <input checked="" type="checkbox"/> Oxygen monitoring system |
| <input type="checkbox"/> HCL monitoring system | <input type="checkbox"/> TRS monitoring system | <input type="checkbox"/> H2S monitoring system |
| <input type="checkbox"/> Temperature monitoring system | <input type="checkbox"/> Stack flow monitoring system | <input type="checkbox"/> Other _____ |

If checked, provide manufacturer's name, model no. and pertinent technical specifications.

NO CHANGES PROPOSED FROM EXISTING MONITORING, AS OUTLINED IN EXISTING TITLE V PERMIT.

- PROVIDE CONTROL EQUIPMENT INFORMATION ON THIS PAGE IF IT PERTAINS TO THIS APPLICATION, OTHERWISE REMOVE THIS PAGE FROM THE APPLICATION.
- IF THERE ARE MORE OF THE SAME TYPE OF CONTROL EQUIPMENT, COPY THAT PAGE AND FILL IN THE INFORMATION AS INDICATED.
- CONTROL EQUIPMENT CAN BE FOUND FROM A MANUFACTURER CATALOGUE OR VENDORS.

<p>2. Attach Air Pollution Episode Strategy (if applicable)</p> <p>NA</p>
<p>3. If the source is subject to 25 Pa. Code Subchapter E, New Source Review requirements,</p> <p>a. Demonstrate the availability of emission offset (if applicable)</p> <p>b. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs.</p> <p>NSR is not applicable; see the Attached Discussion Sections.</p>
<p>4. Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of Article III of the rules and regulations of Philadelphia Air Management, Pennsylvania Department of Environmental Protection and those requirements promulgated by the Administrator of the United States Environmental Protection Agency pursuant to the provisions of the Clean Air Act.</p> <p>See the Attached Discussion Sections.</p>

- PROVIDE CONTROL EQUIPMENT INFORMATION ON THIS PAGE IF IT PERTAINS TO THIS APPLICATION, OTHERWISE REMOVE THIS PAGE FROM THE APPLICATION.
- IF THERE ARE MORE OF THE SAME TYPE OF CONTROL EQUIPMENT, COPY THAT PAGE AND FILL IN THE INFORMATION AS INDICATED.
- CONTROL EQUIPMENT CAN BE FOUND FROM A MANUFACTURER CATALOGUE OR VENDORS.

Discussion

Sunoco Philadelphia Refinery Plan Approval Application for Temporary Operation of No. 38 Boiler at No. 3 Boiler House During the Years 2013 and 2014

Summary

Sunoco Inc. (R&M) (Sunoco) owns and operates a petroleum refinery in Philadelphia, Pennsylvania. This consists of two processing areas, the Girard Point Processing Area (GP) near the Platt Bridge, and the Point Breeze Processing Area (PB) located near the Passyunk Avenue Bridge. The Philadelphia Sunoco refinery is made up of a number of processing units that are employed in the overall process of converting crude petroleum and other hydrocarbon feed stocks into finished hydrocarbon products and petrochemicals. Products include gasoline, home heating oil, diesel fuel and others. All of the Philadelphia Refinery processing units rely on the combustion of gaseous fuels (refinery by-product gas and natural gas) in combustion units (direct fired process heaters and steam producing boilers or heat recovery units) to provide the energy needed to drive hydrocarbon conversions and product separations. The Philadelphia Refinery produces some steam from process unit heat recovery devices. An example cited in this application includes the steam producing catalyst coolers and the CO Boiler at the Unit 1232 Fluid Catalytic Cracking Unit (FCCU). The majority of steam, however, comes from the fuel fired boilers at the GP No. 3 Boiler House. This application relates to the temporary operation of one of the GP boilers, No. 38 Boiler, pursuant to the agreement memorialized in the Fourth Amendment to a Consent Decree (Civil Action No. 05-02866).

No. 3 Boiler House contains four boilers. No.'s 37, 39 and 40 boilers are operated continuously except during maintenance periods or breakdowns. No. 38 Boiler was shutdown, within the last 5 years, in June of 2010 as part of the heater/boiler plan. No. 37, 39 and 40 boilers were provided with NOx controls under the heater/boiler plan pursuant to the Consent Decree (Civil Action No. 05-02866). At the present time, Sunoco needs temporary supplementary steam production during either break down or repair periods at steam producing equipment at Unit 1232 FCCU or at GP No. 3 Boiler House. In order to implement the agreement of the parties to the Fourth Amendment to the Consent Decree (Civil Action No. 05-02866), this application proposes that No. 38 Boiler be brought into use, with certain limitations discussed below, to serve as that temporary supplemental unit. An alternative might be the rental of supplemental units, but Sunoco sees No. 38 boiler as the more practical alternative for the short term

Basis for Operation of No. 38 Boiler

As noted above, there is a Consent Decree (Civil Action No. 05-02866) covering the operation of the No. 3 Boiler House boilers. Sunoco proposes to operate No. 38 Boiler on a temporary basis according to the Fourth Amendment to the Consent Decree, lodged 8/17/12. Pertaining to No. 38 Boiler, this reads as follows:

Discussion

Plan Approval Application for Temporary Operation of No. 38 Boiler at No. 3 Boiler House During the Years 2013 and 2014

"Boiler #38 may be operated only during 2013 and 2014 as a temporary back-up during periods of maintenance or down-time at the Philadelphia Refinery No. 3 boilerhouse or the steam generating portions of the 1232 unit, provided that its total annual NOx emissions do not exceed 24.9 tons per year on a 12 month rolling average basis in 2013 and 2014, and it shall be permanently shut-down as provided in paragraph 10.JJ.iv ("Qualifying Controls") by no later than August 31, 2014"

In order to operate No. 38 Boiler, Sunoco will make necessary repairs. In addition, Sunoco will give consideration to and may install NOx controls that would offer flexibility in the length of time that the No. 38 Boiler would be serviceable under the 24.9 tpy NOx limitation.

Proposed Monitoring for the NOx Limitation.

All the boilers at No. 3 Boiler House exhaust through ductwork to a common stack

The current operating boilers at No. 3 Boiler House have an average NOx rate of about 0.036 Lb/MM Btu. No. 38 Boiler has a NOx rate of 0.271 Lb/MM Btu in its present configuration without added NOx controls. The existing rate for No. 38 Boiler NOx was determined from an operating period in 2010 (specifically 1/1 10 thru 3/5/10) when No. 38 Boiler was operated at the same time as No. 37 and No. 39 Boiler which had Consent Decree NOx controls. This differential is relevant to our monitoring proposal in that the significant difference between a controlled boiler and a non-controlled boiler NOx rate is the basis for a simple and accurate tracking calculation.

No. 3 Boiler House has CEMs for NOx and Oxygen, and a computerized system compliant within the Acid Rain program and Pennsylvania CAIR for NOx reporting. Sunoco proposes to use this system for monitoring. During use of No. 38 Boiler, Sunoco will assume that the Consent Decree controlled boilers (the CD boilers) have the NOx rate in Lb/MM Btu that they had 30 operating days before the use of No. 38 Boiler. This is actually a tracked and reported value in the present monitoring procedure. The 38 Boiler emissions will be calculated by measuring the difference in emission rates. The firing rates of the CD boilers will be multiplied by the previous 30 day average NOx rate in Lb/MM Btu and converted to Lb/Hr. This sum will be subtracted from the total stack calculation for NOx in Lb/Hr. The difference will be the NOx rate from No. 38 Boiler. By this method it will not be necessary to know the No. 38 Boiler stand alone NOx emission rate, and it will not matter whether No. 38 Boiler is modified or not with NOx controls.

This procedure tracks actual NOx emissions and is more accurate than setting up a prescribed number of days of No. 38 Boiler operation based on its typical NOx rate which is actually an unknown any time it is brought on line from a long period of idleness.

Ancillary Emissions Discussion

Discussion

Plan Approval Application for Temporary Operation of No. 38 Boiler at No. 3 Boiler House During the Years 2013 and 2014

The modified Consent Decree does not require a tabulation of other pollutants from No. 38 Boiler during its operation. This is appropriate for a number of reasons. First of all, the proposed operation is temporary in nature over less than a two year period. After 8/31/14 Sunoco will have to find a different method of meeting maintenance period or loss period steam needs. In another vein, the No. 38 Boiler emissions are not additional to normal operation when considering that No. 38 Boiler was operational and available as a supplement within the last 5 years, the typical regulatory look back period.

Proposed Plan Approval Terms

- No. 38 Boiler at No. 3 Boiler House shall be limited to temporary use as a back-up boiler during the term of January 1, 2013 to August 31, 2014
- Back-up provided by temporary operation only during periods of maintenance or down-time at the NO. 3 Boiler House or the steam generating portions of the 1232 unit.
- Annual NOx emissions shall not exceed 24.9 tons per year on a 12 month rolling average basis in the term January 1, 2013 to August 31, 2014
- No. 38 Boiler shall be permanently shut down by no later than August 31, 2014
- The NOx emission limitation shall be monitored utilizing the mechanism described above in the section "Proposed Monitoring for the NOx Limitation"

Compliance History Review

The Pa. Code 25 Section 127.12 requires either a completed compliance review form, or reference to the most recently submitted forms for facilities submitting a compliance review form on a periodic basis. Sunoco files a compliance review semi-annually per 127.12a(j), and the forms are sent to the offices of Philadelphia Air Management Services in May and October of each year.

